REMARKS

By this amendment, claims 1-24 are pending, in which claims 1-3, 7-11, 14-17, and 19-21 are currently amended, and claims 22-24 are newly added. No new matter is introduced.

The Office Action mailed February 6, 2006 rejected claims 1-21 under 35 U.S.C. § 102 as anticipated by *Seid et al.* (US 5,768,271). Also, claims 1-21 were rejected under 35 U.S.C. § 103 as obvious over Applicant Admitted Prior Art (hereinafter "APAA") and in view of *Seid et al.*

In the interest of expediting prosecution, Applicants have amended independent claims 1, 9, 16, and 21. Amended independent claim 1 recites "wherein said one or more egress routers **transmit intra-VPN traffic to a destination host belonging to the VPN** from sources within the VPN within a first access network logical connection for intra-VPN traffic and **all extra-VPN traffic to the destination host** from sources outside the VPN within a second access network logical connection for extra-VPN traffic, separate from the first access network logical connection." Claim 9 now recites "an access network having an access link to **a destination host belonging to a virtual private network (VPN)**... wherein said one or more egress routers **transmit intra-VPN traffic to the destination host** via the first logical connection and **all extra-VPN traffic to the destination host** via the second logical connection." Claim 16, as amended, recites "communicating, from a plurality of ingress routers to one or more egress routers, intra-VPN and extra-VPN traffic destined for a destination host belonging to the VPN ... transmitting intra-VPN traffic from said one or more egress routers to the destination host via the first logical connection, and transmitting all extra-VPN traffic from said one or more egress routers to the destination host via the second logical connection." Independent claim 21 now recites "granting, to traffic having the first priority level at the access link, precedence of access to **a destination host belonging to the VPN** over traffic having the second priority level; and **transmitting the intra-VPN traffic from one or more egress routers to the destination host**

via a first logical connection, and **transmitting all extra-VPN traffic from said one or more egress routers to the destination host** via a second logical connection."

The above features further clarify that separate logical connections exist for intra-VPN traffic and extra-VPN traffic in that such traffic can be transmitted **to the destination host belonging to the VPN**. The claimed features, as amended, are fully supported in the Specification, for example, paragraph [37].

The *Seid et al.* system is concerned with congestion control and management on a per VPN basis, whereby congestion outside of a VPN's logical domain does not affect the performance of the VPN (see Abstract). This is no disclosure of segregating traffic in a way that permits separate logical paths to be used to reach the same destination host. That is, the *Seid et al.* system only segregates traffic among VPNs (inter-VPN traffic), and thus, does not disclose routing traffic to the same destination host using different logical paths.

Specifically, *Seid et al.* utilizes an identification scheme to identify traffic from particular VPNs. Specifically, *Seid et al.* discloses (col. 7: 1-15) that several VPs can be multiplexed on a PP and several VCs can be multiplexed on a VP. Each VC within a VP must be uniquely identified at the VP-sap and, similarly, each VP within a transmission path must be uniquely identified. Each node within the FR network uses the VC and VP identification information for properly switching and routing VPs and VCs.

Seid et al. further discloses (col. 8: 13-20) that a FR node can play the three roles of: (1) FR connection switch; (2) VP cross-connect whereby a VP is switched as a global entity (i.e., the VCs bundled in the VP are not visible); and (3) VC-switch whereby an ingress VP is terminated with its multiplexed VCs unbundled. These VCs are then either terminated or switched to egress VPs. FIG. 7 illustrates a situation encompassing the three roles of the node.

The Office Action, on page 3, contends that "routers distinguish extra-VPN traffic as possessing an evpi (egress Virtual Path identifier) value of "dvpi" and refers to col. 8: 30-40. Applicants respectfully disagree in that an egress path does not equate to the claimed extra-VPN traffic. The cited passage merely refers to the Ingress Port Connection Table, without any mention of the characteristics of the traffic. Rather, the Connection Table shows a mapping of ingress ordered pairs to egress ordered pairs.

In further support of the rejection, the Office Action (on page 3) also refers to passages col. 8: 51-57, and col. 9: 19-22:

> Finally, as a standard FR connection switch, the node switches a connection identified by ingress dlci 25 on ingress port p to egress dlci 39 on egress port 5. In this case, the evpi value is denoted by the special value dvpi, associated with all standard FR connections. The purpose of this dvpi designation will be explained in greater detail hereinafter. (col. 8: 51-57)
>
> A frame with the dlci 25 is received on ivpi p. The fields edlci, evpi and eport, corresponding to the entry 25 in the connection table, indicate that the frame must be forwarded on evpi dvpi of eport 5 with edlci 39. (col. 9: 19-22)

From the above passages, Applicants submit that one of ordinary skill in the art would not reasonably interpret a discussion of ingress and egress ordered pairs to convey information about the source of the traffic. For example, *Seid et al.* describes (col. 12: 20-24) that an ingress VP identity for the incoming frame is given by the field ivpi in the connection table. The VP concept allows the isolation of traffic of one user (or VPN) from the traffic of another user (or VPN).

In light of the above discussion, it is apparent that *Seid et al.*, which only distinguishes VPNs to isolate traffic from one VPN to another VPN to control congestion, does not disclose "wherein said one or more egress routers **transmit intra-VPN traffic to a destination host belonging to the VPN** from sources within the VPN within a first access network logical connection for intra-VPN traffic and **all extra-VPN traffic to the destination host** from sources

outside the VPN within a second access network logical connection for extra-VPN traffic, separate from the first access network logical connection."

As anticipation requires that all features be taught in a single reference, Applicant submits that the rejection of amended independent claims 1, 9, 16, and 21 should be withdrawn.

The rejection of dependent claims 2-8, 10-15, and 17-20 should be withdrawn for at least the same reasons as their respective independent claims, and these claims are separately patentable on their own merits. For example, dependent claim 2 recites "wherein the at least one of the plurality of ingress routers or the at least one of the one or more egress routers logically partitions intra-VPN traffic and extra-VPN traffic using a differentiated services protocol to mark correspondingly the intra-VPN traffic and the extra-VPN traffic." The traffic transmitted across the frame relay network of *Seid et al.* is differentiated by providing each **frame relay packet** with a unique address field to identify the VCs and VPs associated with the VPN over which the packet of information will travel, and not by marking the packets according to a differentiated services protocol (which is a specific protocol that is not mentioned in *Seid et al.*).

With respect to the obviousness rejection over APAA and in view of *Seid et al.* The Office Action, on page 9, acknowledges that APAA does not disclose "wherein intra-VPN and extra-VPN are separated into a first and second logical connection, nor that the logical connections are partitioned such that denial of service attacks on said access link originating from sources outside the VPN are prevented." However, Applicants note that the claims, as amended, clearly distinguish over *Seid et al.* Therefore, the obviousness rejection is unsustainable, as the proposed combination fails to disclose "wherein said one or more egress routers **transmit intra-VPN traffic to a destination host belonging to the VPN** from sources within the VPN within a first access network logical connection for intra-VPN traffic and **all extra-VPN traffic to the destination host** from sources outside the VPN within a second access

network logical connection for extra-VPN traffic, separate from the first access network logical connection."

Turning now to newly added claims 22-24, independent claim 22 recites "determining whether the packet is originated within the virtual private network or external to the virtual private network; and forwarding the packet to the host over a first logical path or a second logical path based on the determination, wherein the first logical path is designated for traffic originating within the virtual private network and the second logical path is designated for traffic originating externally to the virtual private network." Neither the APAA nor the *Seid et al.* reference discloses these features. Dependent claim 23 recites "wherein the steps of receiving, determining and forwarding are performed at a customer premises router configured to process Internet Protocol (IP) packets." Dependent claim 24 recites "wherein the packet is an Internet Protocol (IP) packet, and the steps of receiving, determining and forwarding are performed at a customer premises router configured to process the IP packet." Claims 23 and 24 are allowable at least for their dependency on claim 22.

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (703) 425-8508 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,

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Date

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